

Southeast Alaska Sac Roe Herring Fishery, 2006

by

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March 2006

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



Symbols and Abbreviations

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Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative		fork length	FL
deciliter	dL	Code	AAC	mideye-to-fork	MEF
gram	g	all commonly accepted		mideye-to-tail-fork	METF
hectare	ha	abbreviations	e.g., Mr., Mrs., AM, PM, etc.	standard length	SL
kilogram	kg			total length	TL
kilometer	km	all commonly accepted			
liter	L	professional titles	e.g., Dr., Ph.D., R.N., etc.	Mathematics, statistics	
meter	m			<i>all standard mathematical</i>	
milliliter	mL	at	@	<i>signs, symbols and</i>	
millimeter	mm	compass directions:		<i>abbreviations</i>	
		east	E	alternate hypothesis	H _A
		north	N	base of natural logarithm	<i>e</i>
		south	S	catch per unit effort	CPUE
		west	W	coefficient of variation	CV
		copyright	©	common test statistics	(F, t, χ^2 , etc.)
		corporate suffixes:		confidence interval	CI
		Company	Co.	correlation coefficient	
		Corporation	Corp.	(multiple)	R
		Incorporated	Inc.	correlation coefficient	
		Limited	Ltd.	(simple)	r
		District of Columbia	D.C.	covariance	cov
		et alii (and others)	et al.	degree (angular)	°
		et cetera (and so forth)	etc.	degrees of freedom	df
		exempli gratia		expected value	<i>E</i>
		(for example)	e.g.	greater than	>
		Federal Information		greater than or equal to	≥
		Code	FIC	harvest per unit effort	HPUE
		id est (that is)	i.e.	less than	<
		latitude or longitude	lat. or long.	less than or equal to	≤
		monetary symbols		logarithm (natural)	ln
		(U.S.)	\$, ¢	logarithm (base 10)	log
		months (tables and		logarithm (specify base)	log ₂ , etc.
		figures): first three		minute (angular)	'
		letters	Jan, ..., Dec	not significant	NS
		registered trademark	®	null hypothesis	H ₀
		trademark	™	percent	%
		United States		probability	P
		(adjective)	U.S.	probability of a type I error	
		United States of		(rejection of the null	
		America (noun)	USA	hypothesis when true)	α
		U.S.C.	United States	probability of a type II error	
			Code	(acceptance of the null	
		U.S. state	use two-letter	hypothesis when false)	β
			abbreviations	second (angular)	"
			(e.g., AK, WA)	standard deviation	SD
				standard error	SE
				variance	
				population	Var
				sample	var
Weights and measures (English)					
cubic feet per second	ft ³ /s				
foot	ft				
gallon	gal				
inch	in				
mile	mi				
nautical mile	nmi				
ounce	oz				
pound	lb				
quart	qt				
yard	yd				
Time and temperature					
day	d				
degrees Celsius	°C				
degrees Fahrenheit	°F				
degrees kelvin	K				
hour	h				
minute	min				
second	s				
Physics and chemistry					
all atomic symbols					
alternating current	AC				
ampere	A				
calorie	cal				
direct current	DC				
hertz	Hz				
horsepower	hp				
hydrogen ion activity	pH				
(negative log of)					
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

FISHERY MANAGEMENT REPORT NO. 06-07

SOUTHEAST ALASKA SAC ROE HERRING FISHERY, 2006

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March 2006

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This document should be cited as:

Davidson, W., W. Bergmann, P. Doherty, K. Monagle and D. Gordon. 2006. Southeast Alaska sac roe herring fishery, 2006. Alaska Department of Fish and Game, Fishery Management Report No. 06-07, Anchorage.

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ABSTRACT

This report describes the Southeast Alaska sac roe herring regulations, areas, and Guideline Harvest Levels for 2006. Management plans for the 2006 fishery are outlined, including procedures for announcing fishery openings and closures, and area Alaska Department of Fish and Game contacts. Traditional sac roe fisheries, including both gillnet and purse seine herring fisheries operations are detailed.

Key words: herring, sac roe, set gillnet, purse seine, management, guideline harvest levels, commercial herring fishing regulations.

INTRODUCTION

Southeast Alaska commercial herring fisheries occur during the winter when herring are harvested for use primarily as bait, and during the spring when herring are harvested for their roe. The roe harvest includes the traditional sac roe fisheries (set gillnet and purse seine) and, in recent years, spawn-on-kelp pound fisheries. This management plan provides an overview of the 2006 sac roe herring fisheries for Southeast Alaska including expected harvest levels and management strategy. Separate management plans for the northern and southern Southeast Alaska spawn-on-kelp pound fisheries will be available at local department area offices.

Southeast Alaska roe herring are commercially harvested by purse seine and set gillnet gear types, both of which are included in the limited entry system. There are currently six sac roe herring fishing areas in Southeast Alaska consisting of two exclusive purse seine and three exclusive gillnet areas. An additional area, Section 1-E/Section 1-F (West Behm Canal) will be open on alternate years for set gillnet and purse seine gear when the threshold level is met. Sac roe fishing areas are shown in Figure 1.

Approximately 12,515 tons of herring were harvested in commercial sac roe herring fisheries conducted in Southeast Alaska during 2005. A harvest of approximately 11,920 tons is anticipated for the 2006 season.

REGULATIONS

Commercial herring fishing regulations are outlined by the Alaska Department of Fish and Game (ADF&G) in the Commercial Herring Fishing Regulations booklet. Copies of the 2004-2005 Supplemental Commercial Herring Fishing Regulations edition may be obtained at any Department of Fish and Game office. Management plans which apply to the herring harvest in the sac roe fisheries include: Management Guidelines for Commercial Herring Sac Roe Fisheries [5 AAC 27.059], Herring Management Plan for Southeast Alaska Area [5 AAC 27.190], and The Sitka Sound Commercial Sac Roe Herring Fishery Management Plan [5 AAC 27.195].

New regulations adopted by the Alaska Board of Fisheries during the January 2006 meeting will be in effect during the 2006 sac roe fisheries. These regulations clarify that the West Behm Canal herring sac-roe fishery will alternate between fisheries and not calendar years, amend the West Behm Canal cooperative fishery management plan (CFMP) eliminating the requirement that all purse seine CFEC permit holders need to sign the CFMP, and allow a herring gillnet vessel with two permit holders on board to fish with a net not exceeding 75 fathoms. ADF&G staff listed at the conclusion of this plan is available to provide further details.

VESSEL CHECK-IN, CHECK-OUT, AND REPORTING PROCEDURE

Buyers or buyer's agents shall register all vessels employed in transporting and processing herring with ADF&G prior to commencing with those activities and make daily reports of

herring purchased from fishers as specified by a local representative of ADF&G [5 AAC 27.162(a)]. ADF&G requests that tenders and fishing vessels not previously registered through buyers or buyer's agents, check-in and checkout of the fishing areas with department personnel located on the fishing grounds to facilitate timely and complete assessment of herring landings.

Fish tickets must be provided to the Commercial Fisheries Entry Commission (CFEC) permit holder at the time of delivery to the first buyer or buyer's agent [5 AAC 27.162(c)]. This means that there must be a separate fish ticket for each delivery to a tender before the tender leaves the fishing grounds to make a landing. At the request of the CFEC permit holder, on-the-grounds weight and estimated roe content shall both be recorded on the fish ticket. Operators who will transport fish out of Alaska before processing must submit a fish ticket to the department before departing the state [5 AAC 39.130(c)]. Fully completed fish tickets with updated accurate and final weights and roe percentages must be submitted to ADF&G within 10 days after the termination of buying operations, unless otherwise specified by ADF&G [5 AAC 27.162(a)(3)].

REPORTING PROCEDURES FOR FLOATING FISH PROCESSORS

Operators of floating fish processing vessels are required to report in person, by radio, or telephone, to the local department representative in the management area of intended operation before processing begins [5 AAC 39.130 (g)]. The report must include the location and date of intended operation.

ANNOUNCEMENT OF OPENINGS AND CLOSURES

Fishery openings and closures will be implemented via department emergency order. Announcements will be issued through normal news release channels and on the fishing grounds over VHF radio. The VHF radio frequency for receiving field announcements will be indicated on the fishing grounds. Harvesters should expect short notification of opening and closing times. This is necessary to provide fishing opportunities prior to major spawning and to maintain the harvest at desired levels.

ADF&G will monitor herring in advance of the expected fishery opening dates. Fisheries will be placed on a two-hour notice prior to the first opening. During the Sitka fishery, ADF&G will try to give the industry a 36-hour advance warning of the time that the fishery is goes on two-hour notice. However, if spawning is either earlier or heavier than anticipated and waiting 36 hours could result in loss of fishing opportunity, this much advance notice will not be given. During the Seymour Canal gillnet fishery, ADF&G will provide the industry with a 12-hour advance notice of a possible decision to place the fishery on two-hour notice. The 12-hour notice helps limit the amount of time vessels must remain on the fishing grounds prior to the start of the fishery.

MANAGEMENT STRATEGY

The harvest strategy for Southeast Alaska herring sac roe fisheries is based on the availability and distribution of mature herring containing quality roe (at least 10% mature roe), mature spawning biomass estimates, population age structure, recruitment, size-at-age, and past spawning success. Southeast Alaska herring generally reach maturity at a standard length (tip of the snout to the end of the hypural plate) of 185 mm (8 inches), a size achieved by some three- and most four-year-old fish.

Herring populations are assessed annually to determine whether individual spawning stocks are above threshold and to determine the appropriate harvest rate (see Sliding Scale Harvest Rate on next page). As specified in 5 AAC 27.190 HERRING MANAGEMENT PLAN FOR STATISTICAL AREA A, harvest of a particular spawning stock is not allowed unless an assessment of the abundance and general condition of that spawning stock has been conducted and the estimated biomass is above the minimum spawning biomass threshold level.

The threshold level is the herring biomass needed to meet minimum spawning and/or allocation requirements. The established threshold levels for the herring sac roe fishing areas are:

Fishing Area	Threshold Level
Seymour Canal	3,000 tons
Revilla Channel	6,000 tons
Lynn Canal	5,000 tons
Sitka Sound	20,000 tons
Hobart/Houghton	2,000 tons
West Behm Canal	6,000 tons

Varieties of methods have been used to assess the status of herring populations in Southeast Alaska. Before 1970, herring abundance was assessed through visual estimates made from vessels using depth sounders and sonar immediately prior to spawning or on wintering aggregations. In addition, miles of spawn were documented with aerial or skiff surveys. A computer-assisted hydro acoustic survey method was developed in the early 1970s and used extensively during the late 1970s to the mid-1980s. Spawn deposition surveys were first used in 1976 and continue to be a key component of current assessment methods. The spawn deposition method combines diver estimates of herring egg deposition on the spawning grounds along with estimates of total area receiving spawn and average fecundity, to yield an estimate of spawning biomass. In past years, estimates of spawning biomass from one year were used as the forecast to set harvest quotas for individual spawning stocks for the following year.

Beginning in 1993, ADF&G began using age-structured analysis (ASA) to forecast abundance for selected spawning stocks with sufficient historic stock information. The ASA method relies on a time series of herring population assessment data (e.g., spawning biomass as determined by egg deposition surveys and fecundity, age composition and weight-at-age from samples of spawning herring, catch age composition and weight-at-age, and weight-at-age from winter test sampling) to forecast herring biomass for those spawning stocks. This method applies estimates of recruitment, growth, maturation, and natural mortality to an estimate of spawning escapement from one year to forecast biomass for the next year. This is an important development because gains in herring biomass due to recruitment and growth are often not equal to the loss of biomass due to natural mortality, as is assumed when using the spawn deposition method for forecasting abundance. The ASA method is currently used to forecast herring abundance for the Sitka, Revilla Channel, and Seymour Canal fisheries.

Beginning in 1995, ADF&G began using a biomass accounting (BA) method to forecast abundance for stocks without sufficient historic stock information for ASA modeling. Spawn deposition estimates were obtained for these areas as an initial indication of the likelihood that the spawning biomass would be above the respective thresholds for each area. For those areas likely to be above their thresholds, biomass accounting was then used to forecast biomass. The

BA method uses the most recent year's spawn deposition estimate of eggs, the age composition of the spawning biomass, and weights-at-age to project the following year's return of mature herring. It also uses an average survival estimate from the age-structured analyses (ASA) of three other areas in Southeast Alaska and maturation rates from the nearest stock assessed by ASA. The median historical level of recruitment of age-3 herring specific to each stock is also applied to forecast biomass. The BA method is currently used to forecast herring abundance for the West Behm Canal and the Hobart/Houghton fisheries.

SLIDING SCALE HARVEST RATE

The allowable harvest is based on a graduated scale that allows for higher harvest rates as a herring population increases relative to the threshold level. This approach maintains annual harvest rates between 10% and 20% of the forecast spawning stock in excess of established threshold levels. When the spawning stock biomass is at the minimum threshold level, a 10% harvest is allowed. The allowable harvest increases an additional 2% for every spawning stock biomass increase of an amount equal to the threshold level and reaches a maximum of 20% when the population is six-times the threshold level.

The percent harvest rate for any multiple of the threshold level from one to six can be estimated from Figure 2, or by performing the following calculation:

$$\text{Percent HarvestRate} = 8 + 2 \left[\frac{\text{Forecast Spawning Population Size}}{\text{Threshold Level}} \right] \quad (1)$$

An exception to the harvest rate formula now applies to the Sitka Sound sac roe herring fishery based on Board of Fisheries action taken at the 1997 meeting in Sitka. For the Sitka fishery, the new harvest rate is calculated as follows using a 20,000-ton threshold (Figure 3):

$$\text{Percent HarvestRate} = 2 + 8 \left[\frac{\text{Forecast Spawning Population Size}}{\text{Threshold Level}} \right] \quad (2)$$

ROE QUALITY

Sac roe herring fisheries are managed in compliance with regulation 5 AAC 27.059 MANAGEMENT GUIDELINES FOR COMMERCIAL HERRING SAC ROE FISHERIES. This regulation outlines ways ADF&G can manage sac roe fisheries to enhance value. To determine the best time to fish, ADF&G samples prespawning herring populations in cooperation with harvesters and trained industry technicians. All test-fishing activities must be authorized by department biologists on the fishing grounds.

GILLNET FISHERIES

There are three exclusive set gillnet sac roe fishing areas in Southeast Alaska: the Revilla Channel fishery in regulatory Section 1-F, the Seymour Canal fishery in Section 11-D, and the Hobart-Houghton fishery in District 10. During the 2003 Alaska Board of Fisheries meeting in Sitka the board adopted a new sac roe gillnet fishery for West Behm Canal. The new gillnet fishery will operate on alternate years with a purse seine sac roe fishery. A summary of historical harvest and fishing time information for each fishery is shown in Table 1. Gillnetters are reminded that regulations require identification tags, issued by ADF&G, to be placed on one buoy at each end of a herring set gillnet [5 AAC 27.131 (g)].

REVILLA CHANNEL

Set gillnet sac roe fisheries have occurred in the Revilla Channel area (Section 1-F) since 1976 (Table 1). Seasonal landings have ranged from a low of 171 tons in 1978 to a high of 3,250 tons in 1983. In 1990, and from 2000 through 2005, the minimum threshold level was not reached and no fishery was permitted. In 1999, a Guideline Harvest Level (GHL) of 870 tons was established. However, due to on-grounds concern over the lack of herring located in Alaska waters, the fishery was not opened and no herring were harvested.

In 2005, very limited herring spawn was observed in the Kah Shakes/Cat Island area. Therefore, no sac roe herring fishery will take place there in 2006. ADF&G, however, will continue to monitor the status of the Revilla Channel herring. Spawning will be mapped, samples will be taken for age class distribution, and dive surveys will be conducted to estimate the spawning biomass. The population estimate determined in 2006 will be used to set the harvest level for 2007.

WEST BEHM CANAL

The Alaska Board of Fisheries passed regulations in January 2003 to open the West Behm Canal area (Section 1-E and portions of Section 1-F) for sac roe herring fishing and bait pound operation. Elements of the commercial herring fishery plan include:

1. Annual, alternating fishing schedule between set gillnet and purse seine gear in years which the threshold level is met with the first fishery in 2004 being set gillnet;
2. A cooperative purse seine fishery in years when the purse seine fishing gear is allowed;
3. Closed waters in the Clover Passage and Tongass Narrows area, and;
4. The establishment of a bait pound fishery, which is allocated 10% of the GHL for the West Behm Canal spawning population (5 AAC 27.160).

The 2004 BA forecast of mature spawning biomass for the West Behm Canal herring population was 9,366 tons, establishing a GHL of 1,042 tons. This GHL included 940 tons for the sac roe herring fishery and 102 tons for the bait pound fishery. However, due to on-grounds concerns over the lack of herring in West Behm Canal, the fishery was not opened and no herring were harvested. The actual spawning biomass observed in 2004 was 443 tons, much lower than the forecast. The 2006 BA forecast for West Behm Canal is 1,033 tons, and is below the threshold level of 6000 tons. This means there will be no sac roe herring fishery in West Behm Canal for 2006.

SEYMOUR CANAL

Set gillnet fisheries have occurred intermittently in Seymour Canal (Section 11-D) since the fishery was changed from a seine area to a gillnet area in 1980. Annual landings during years fished by gillnets have ranged from a low of 302 tons in 1987 to a high of 1,519 tons in 2003.

The 2006 ASA forecast of the mature spawning biomass for the Seymour Canal herring stock is 10,193 tons. Using the sliding scale harvest rate, this biomass allows a harvest rate of 14.8% of the population and a GHL of 1,508 tons for the 2006 fishing season. The forecast indicates that the spawning stock will consist of primarily age-8 herring.

Opening dates for the Seymour Canal gillnet fishery have ranged from April 26 to May 16. Since 1980, spawning has started as early as April 19 and as late as May 15. Department

personnel will begin to monitor the Seymour Canal area in mid-April. Initially, monitoring will be limited to aerial surveys. Depending on observed herring activity, vessels with department personnel will be on the fishing grounds by late April or early May.

Set gillnet buoy stickers must be obtained and placed on buoys prior to fishing. Identification stickers will be available free of charge from the Douglas, Ketchikan, and Petersburg Fish and Game offices prior to the time that ADF&G's vessel is on the fishing grounds; thereafter, identification stickers can only be obtained from ADF&G's vessel. The stickers will only be issued to valid permit holders and proper picture identification will be required. If during the course of the fishery a buoy sticker is lost, a replacement sticker must be obtained from ADF&G before fishing is resumed.

Legal gear for the Seymour Canal fishery is one 50-fathom net, except as noted above under the "Regulations" section of this management plan, with a minimum mesh size of 2 1/8 inches stretched mesh and a maximum depth of 120 meshes.

Regulations require a one-hour grace period for nets to be removed from the water following the announced closure time. No gillnet may be reset after the closure time. Additionally, ADF&G has been given the authority to open the fishery for one hour or less without a grace period. An opening of this nature could occur if, after the initial opening, a small but manageable amount of herring is left on the GHL. The department will announce if a grace period will not be allowed due to an opening of one hour or less.

HOBART/HOUGHTON

The Alaska Board of Fisheries adopted a regulation in January 1997 that allocates any unharvested portion of the GHL for the Hobart/Houghton winter food and bait fishery to the sac roe gillnet fishery [5 AAC 27.160 (f)]. Sac roe harvests occurred in 1997 through 1999, and in 2005. In 2000, the GHL was harvested in the winter bait fishery (Table 1). No harvest occurred from 2001 through 2004.

The 2006 BA forecast of mature spawning biomass for the Hobart/Houghton herring spawning stock is 864 tons. This is below the minimum threshold level of 2,000 tons so there will be no fishery in 2006.

PURSE SEINE FISHERIES

There are two exclusive purse seine herring sac roe areas in Southeast Alaska: Lynn Canal and Sitka Sound. Commercial fishing will be allowed only in Sitka Sound during the 2006 season. A summary of harvest and fishing time information for each fishery is shown in Table 2. During the 2003 Alaska Board of Fisheries meeting in Sitka, the board adopted a new sac roe purse seine fishery for West Behm Canal. The new seine fishery will operate on alternate years with a gillnet sac roe fishery in years when the threshold level is met.

LYNN CANAL

The Lynn Canal herring sac roe fishing area encompasses regulatory Sections 15-B, 15-C, and that portion of Section 11-A north of the Shrine of St. Therese.

The Lynn Canal fishery has not been open since 1982. Aerial and on-the-grounds surveys conducted in Lynn Canal during the spring of 2005 documented only 2.8 nautical miles of spawn (including Oliver's Inlet area). Spawn deposition surveys in Berners Bay were conducted on

May 18 leading to a mature spawning biomass estimate of 668 tons, well below the spawning threshold level of 5,000 tons. This fishery will not open in 2006.

WEST BEHM CANAL

The Alaska Board of Fisheries passed regulations in January 2003 that allowed for a cooperative purse seine fishery on alternate years in which the threshold level is met. Since in 2005 the West Behm Canal threshold level was not met, there will be no sac roe herring fishery there in 2006.

SITKA SOUND

The Sitka Sound sac roe fishing area encompasses the waters of Section 13-B north of the latitude of Aspid Cape, excluding the waters of Whale and Necker Bays.

The preliminary 2006 forecast for the Sitka Sound herring spawning biomass was 50,333 tons, announced on December 6, 2005. This biomass provides for a harvest rate of 20% and a preliminary GHL of 10,067 tons. This estimate was the result of applying stock specific ASA model for the Sitka Sound herring population using time series of spawn deposition data, spawning age composition, and commercial age composition.

Based on size-at-age data from winter samples collected in Sitka Sound on January 31, 2006, the GHL for the 2006 sac roe herring fishery has been revised to a **final GHL of 10,412 tons**. The GHL is based on a biomass forecast of 52,059 tons and a 20% harvest rate.

The ASA forecasting model indicates the 2006 spawning population will consist of 11% age-3, 3% age-4, 8% age-5, 4% age-6, 30% age-7, and 44% age-8+ herring. Applying expected age structure and 2006 winter weight-at-age measurements to the population forecast in numbers of fish yields an overall average weight of 152 grams.

Herring distribution and roe quality will be monitored prior to and during the fishing period. Monitoring methods for 2006 will include aerial surveys, hydroacoustic surveys, and test fishing. In 2006, ADF&G will continue to coordinate the test boat program through a fisherman-coordinator who will assign daily test fishing boats requested by ADF&G. Prior to making test sets, the identified test boats will contact ADF&G biologists on the grounds to monitor set locations and to plan for transport of herring samples to a central location for analysis by industry technicians. The areas open to fishing will depend on the distribution of herring, the need to provide for a fishery that will harvest good quality herring, and the need to provide a reasonable opportunity for subsistence.

In order to help ADF&G to ensure that a reasonable opportunity is provided for subsistence, a Memorandum of Agreement (MOA) was signed by ADF&G and the Sitka Tribe of Alaska (STA) on November 4, 2002, and finalized by the Alaska Board of Fisheries on December 17, 2002. This agreement brings consideration of potential impacts of the commercial sac roe herring fishery on the subsistence herring fishery in Sitka Sound to the ADF&G fishery manager through an in-season consultation process. A Sitka Tribe of Alaska appointed in-season Tribal Liaison will be consulted prior to each commercial opening. If the Tribe concludes that there is a potential for subsistence harvesters to be negatively impacted by the proposed opening, the Tribal Liaison will provide this conclusion and reasoning to the department verbally and in writing. An in-season task force consisting of the Tribal Liaison, a permit holder, a member of the Sitka Fish and Game Advisory Committee, and ADF&G will meet immediately after receiving notification of an objection to a commercial opening. ADF&G will also consider any in-season recommendations from buyers or processing stakeholders, but no individual processing

representative will be designated as a task force representative who may speak for other processors. In the event of dissenting recommendations from task force members, the ADF&G manager would be the final arbiter after having considered all input from the task force.

Beginning with the 2002 season STA, working in collaboration with ADF&G Subsistence Division, has developed a methodology using a household survey, in lieu of using a permit system, to estimate the subsistence herring roe harvest. Following each season, the Sitka Tribe of Alaska conducts a “census” type survey whereby all known participants in the subsistence fishery are contacted to determine the results of the subsistence harvest. The list of participants is changed each season to reflect newly identified participants and to remove past participants who have either moved or passed away. The survey information is used to determine the amount and quality of the subsistence harvest, and would indicate whether the amount reasonably necessary for subsistence (105,000-158,000 pounds) had been successfully harvested. The result of the 2005 survey was a harvest of 75,572 pounds of herring roe, below the amount reasonably necessary for subsistence. This compares to 294,000 in 2004, 210,000 in 2003 and 112,000 in 2002.

The 2005 sac roe harvest occurred entirely in the waters between the Sitka road system north of town and the island groups to the west. Despite a determination to disperse the harvest to other areas during the 2005 season the distribution of herring did not provide workable opportunities to do so. To the extent that the commercial harvest can affect subsistence opportunities the department is determined to act on opportunities for openings outside of the high use subsistence areas as they arise. The department recognizes that fishing within the high use area may be necessary in order to provide an opportunity for the commercial fishery to harvest and to reach the season’s GHL.

ADF&G, STA and industry will continue to work collaboratively in identifying sac roe harvest opportunities in the greater Sitka Sound area, and whether it is necessary to distribute the harvest time and area in the commercial fishery in order to provide a reasonable opportunity for subsistence. Mechanisms of consideration for distribution of commercial harvest may include the following:

1. Limiting harvest in the highest frequency spawning area along the Halibut Point Road shoreline in proportion to historical use patterns established by past commercial competitive fisheries (50–55% of the GHL).
2. Choosing dispersal of time and area by selecting appropriate in-season options.
3. Considering recommendations from in-season task force members.

ADF&G held a Southeast Alaska sac roe fisheries pre-season planning meeting in Ketchikan on January 23, 2006. It was generally agreed upon that the harvest strategy would be to harvest the 10,412-ton GHL in three openings with at least one day between openings. This was consistent with the 2005 season, which had a similar GHL and processing capacity. This will serve as a general plan of approach for the 2006 fishery. It will be necessary to remain flexible and adapt specific opening target harvest levels in consideration of: in-season assessment of herring distribution and quality, changes in available processing and tendering capacity, input from industry representatives, and dispersing the harvest by time and area away from traditional subsistence harvesting areas. A general pre-fishery meeting immediately prior to the fishery will be held in Sitka when the fishery is being placed on 2-hour notice.

During the 2004 fishery, a collision of seine vessels occurred causing significant damage to one of the vessels. The incident was investigated by the United States Coast Guard (USCG) Marine Safety Detachment. The conclusion of the investigation was that violations of Coast Guard “Rules of the Road” regulations had occurred during the incident and therefore fines have been levied against the operators of the vessels. At a pre-season planning meeting prior to the 2005 fishery, a representative of the USCG made a presentation to inform fishery participants of the application of “Rules of the Road” during the fishery. The USCG representative made it implicit that vessels participating in the fishery are subject to citation and fines if “Rules of the Road” are violated during the conduct of the fishery. For further information regarding the application of “Rules of the Road” during the conduct of the fishery, contact the USCG Marine Safety Detachment at 966-5454.

The Magnuson-Stevens Fishery Conservation and Management Act restricts the use of foreign vessels outside of internal waters and the port of Sitka. Fishery openings outside of internal waters and the port of Sitka are possible. Operators of foreign vessels wanting to participate in the Sitka Sound herring sac roe fishery are encouraged to contact the National Marine Fisheries Service at (907) 747-6940 for more details.

LIST OF MANAGEMENT CONTACTS

The following ADF&G, Division of Commercial Fisheries personnel may be contacted regarding this management plan:

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TABLES AND FIGURES

Table 1.—Southeast Alaska gillnet sac roe herring fisheries information summary, 1976–2005.

Year	Seymour Canal ^a				Revilla Channel			
	Guideline Harvest Level (Tons)	Catch (Tons)	Date 2-Hour Notice Effective	Opening Dates	Guideline Harvest Level (Tons)	Catch (Tons)	Date 2-Hour Notice Effective	Opening Dates
1976	200	195		May 9	300	426	March 23	April 2
1977	500	485	May 4	May 9	800	820	March 29	April 1
1978	500	729	May 2	May 8	680	171	March 26	April 4
1979	250	269	May 3	May 3	585	528	March 28	March 29
1980	--	--	Fishery Not Open	--	1,100	1,140	March 25	March 25
1981	600	615	April 28	April 28	1,550	1,840	March 20	March 20
1982	--	--	Fishery Not Open	--	1,700	2,279	March 20	March 26
1983	--	--	Fishery Not Open	--	2,500	3,250	March 23	March 24
1984	375	518	April 20	April 26	2,100	2,182	March 20	March 29
1985	--	--	Fishery Not Open	--	2,300	2,161	March 28	March 29
1986	300	339	May 5	May 10	1,100	1,536	March 29	March 31
1987	419	302	May 1	May 5, 6	1,200	1,440	March 24	March 26, 27
1988	530	586	April 20	April 26-May 1	953	1,087	March 24	March 25
1989	332	547	April 21	April 28	647	592	March 20	March 20, 21
1990	312	359	April 21	April 28-29	--	--	--	--
1991	--	--	Fishery Not Open	--	680	660	March 28	April 8-11
1992	--	--	Fishery Not Open	--	1,200	1,256	April 1	April 3
1993	--	--	Fishery Not Open	--	717 ^b	737	March 31	April 10
1994	368	382	April 28	April 29	880 ^b	749	April 9	April 9,11
1995	316	319	April 30	May 14	630	626	April 11	April 12
1996	--	--	Fishery Not Open	--	871	605	April 8	April 10
1997	-	-	Fishery Not Open	--	912	1,137	April 6	April 6
1998	633	585	April 30	May 1-4	620	616	April 1	April 1, 2
1999	595	706	April 30	April 30	870	0	No Fishery	Fishery Not Opened
2000	346	394	May 3	May 5	0	0	No Fishery	Fishery Not Opened
2001	474	620	May 6	May 11-12	0	0	No Fishery	Fishery Not Opened
2002	1,096	1,066	May 12	May 16-17	0	0	No Fishery	Fishery Not Opened
2003	1,712	1,518	Apr 28	Apr 29-May 2	0	0	No Fishery	Fishery Not Opened
2004	838	804	May 1	May 3	0	0	No Fishery	Fishery Not Opened
2005	894	945	April 26	May 1	0	0	No Fishery	Fishery Not Opened

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Table 1.–(Page 2 of 2)

Hobart-Houghton					West	Behm	Canal		
Year	Guideline Harvest Level ^d (Tons)	Catch (Tons)		Date 2-Hour Notice Effective	Opening Dates	Guideline Harvest Level (Tons)	Catch (Tons)	Date 2-Hour Notice Effective	Opening Dates
		Bait	Sac Roe		Bait/Sac Roe				
1977	0	40	0		October 1				
1978	0	0	0		Fishery Not Open				
1979	0	0	0		Fishery Not Open				
1980	0	0	0		Fishery Not Open				
1981	0	0	0		Fishery Not Open				
1982	0	0	0		Fishery Not Open				
1983	0	0	0		Fishery Not Open				
1984	0	0	0		Fishery Not Open				
1985	0	0	0		Fishery Not Open				
1986	0	0	0		Fishery Not Open				
1987	0	0	0		Fishery Not Open				
1988	0	0	0		Fishery Not Open				
1989	0	0	0		Fishery Not Open				
1990	0	0	0		Fishery Not Open				
1991	0	0	0		Fishery Not Open				
1992	200	0	0		January 13, 1992				
1993	500	0	0		January 12, 1993				
1994	230	140	0		October 17, 1993				
1995	250	229	0		October 1, 1994				
1996	700	230	0		October 15, 1995				
1997	550	100	442	April 19	October 1, 1996-April 28				
1998	260	0	351	April 19	October 1,1997-April 20				
1999	436	0	506	April 25	October 14, 1998-April 26				
2000	418	432	0	No Fishery	December 1, 1999-Gillnet not opened				
2001	0	0	0	No Fishery	Fishery Not Opened				
2002	0	0	0	No Fishery	Fishery Not Opened				
2003	0	0	0	No Fishery	Fishery Not Opened	First fishery Set for 2004 by Board of Fisheries			
2004	0	0	0	No Fishery	Fishery Not Opened		0	No Fishery	Fishery Not Opened
2005	223	0	204	April 24	April 24	0	0	No Fishery	Fishery Not Opened

^a Seymour Canal was a purse seine fishing area prior to 1980.

^b Quota reduced by 150 tons as an allocation for the Annette Island sac roe harvest.

^c Hobart Bay was opened to Gillnet Sac Roe Fishing in 1997.

^d Gillnet quota is the portion left after the winter bait fishery is completed.

Table 2–Southeast Alaska purse seine sac roe herring fisheries information summary, 1976–2005.

Year	Juneau ^a -Lynn Canal				Sitka Sound				
	Guideline Harvest Level (Tons)	Catch (Tons)		Date 2-Hour Notice Was Effective	Opening Dates	Guideline Harvest Level (Tons)	Catch(Tons)	Date 2-Hour Notice Was Effective	Opening Dates
1976	750	432	Seine		April 26	780	800	April 10	April 16
1977	875	124	Gillnet		April 29	--	--	Fishery Not Open	--
		709	Seine		April 19				
1978	500	217	Gillnet		April 20	250	175	April 4	April 5
		602	Seine	April 19	April 20				
	200	346	Gillnet	April 21					
1979	--	--		Fishery Not Open	--	2,000	2,250	April 7	April 12
1980	600	975	Seine	April 13	April 26	4,000	4,385	April 4	April 4, 5
1981	725	761	Seine	April 17	April 23	2,700	3,506	March 23	March 24, 26
1982	375	551	Seine	April 30	April 30	3,000	4,363	March 26	March 30
1983	--	--		Fishery Not Open	--	5,500	5,463	March 23	March 26, 29
1984	--	--		Fishery Not Open	--	5,000	5,711	March 22	March 26, 27, 28
1985	--	--		Fishery Not Open	--	7,700	7,475	March 24	March 29, April 1, 5
1986	--	--		Fishery Not Open	--	5,029	5,443	March 28	April 2, 8
1987	--	--		Fishery Not Open	--	3,600	4,216	March 23	March 31
1988	--	--		Fishery Not Open	--	9,200	9,573	March 25	April 4 - 14
1989	--	--		Fishery Not Open	--	11,700	11,831	March 23	March 31 - April 8
1990	--	--		Fishery Not Open	--	4,146	3,804	April 4	April 5, 6
1991	--	--		Fishery Not Open	--	3,200	1,908	March 29	April 10 - April 13
1992	--	--		Fishery Not Open	--	3,356	5,368	March 30	April 6
1993	--	--		Fishery Not Open	--	9,691	10,186	March 26	March 27 - April 3
1994	--	--		Fishery Not Open	--	4,432	4,753	March 28	March 29, 31
1995	--	--		Fishery Not Open	--	2,609	2,908	March 23	March 25, 27
1996	--	--		Fishery Not Open	--	8,144	8,144	March 23	March 23, March 31-Apr. 9

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Table 2—(Page 2 of 2)

Year	Juneau ^a -Lynn Canal				Sitka Sound			
	Guideline Harvest Level (Tons)	Catch (Tons)	Date 2-Hour Notice Was Effective	Opening Dates	Guideline Harvest Level (Tons)	Catch (Tons)	Date 2-Hour Notice Was Effective	Opening Dates
1997	--	--	Fishery Not Open	--	10,900	11,147	March 18	March 18-March 23
1998	--	--	Fishery Not Open	--	6,900	6,705	March 16	March 16, 18, 19
1999	--	--	Fishery Not Open	--	8,476	9,136	March 19	March 22, 24, 26-27
2000	--	--	Fishery Not Open	--	5,120	4,572	March 13	March 19, 22
2001	--	--	Fishery Not Open	--	10,597	12,034	March 15	March 22, 26, 27
2002	--	--	Fishery Not Open	--	11,042	9,885	March 25	March 27, 29, 31, April 2, April 12-15
2003	--	--	Fishery Not Open	--	6,969	7,051	March 20	March 22, 23, 26
2004	--	--	Fishery Not Open	--	10,618	10,479	March 19	March 21, 25, 27
2005	--	--	Fishery Not Open	--	11,192	11,366	March 20	March 23, 25, 27-29

^a The Juneau fishery was both a gillnet and seine area prior to 1980.

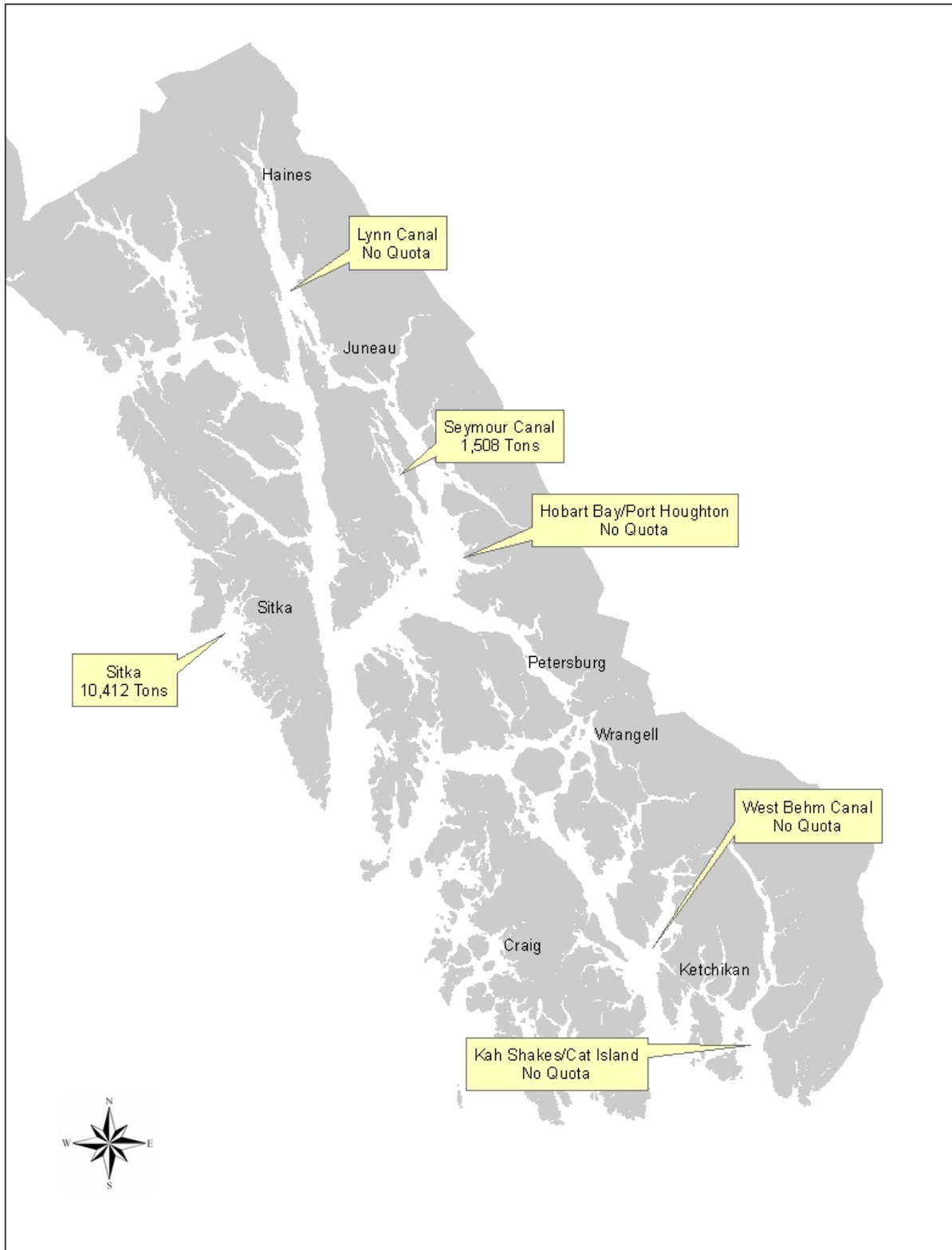


Figure 1.—Southeast Alaska sac roe herring areas and Guideline Harvest Levels for 2006.

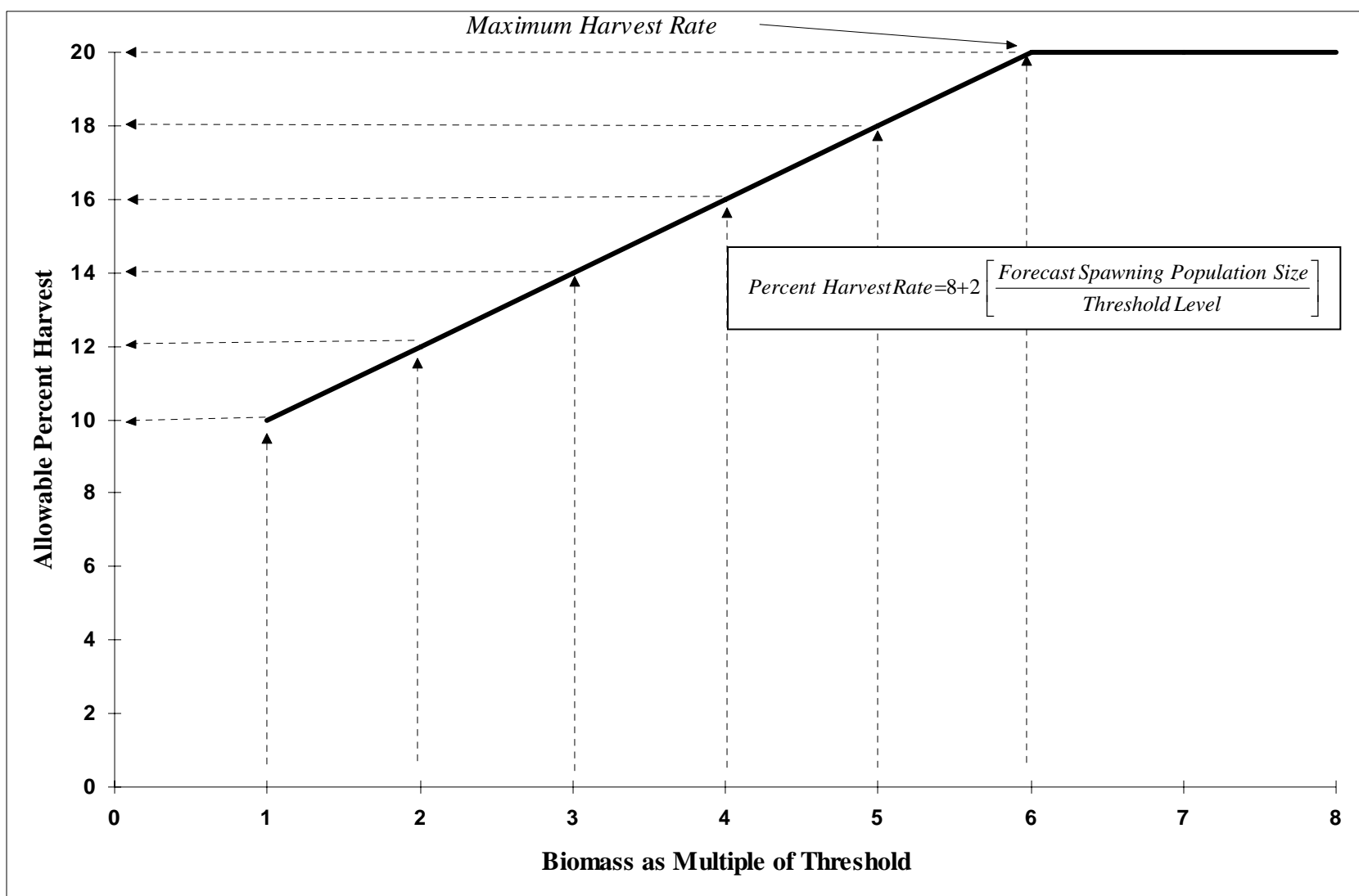


Figure 2.—Generalized harvest strategy for Southeast Alaska herring. The allowable percent annual harvest is plotted against the estimated biomass of mature herring expressed as a multiple of the established harvest threshold level.

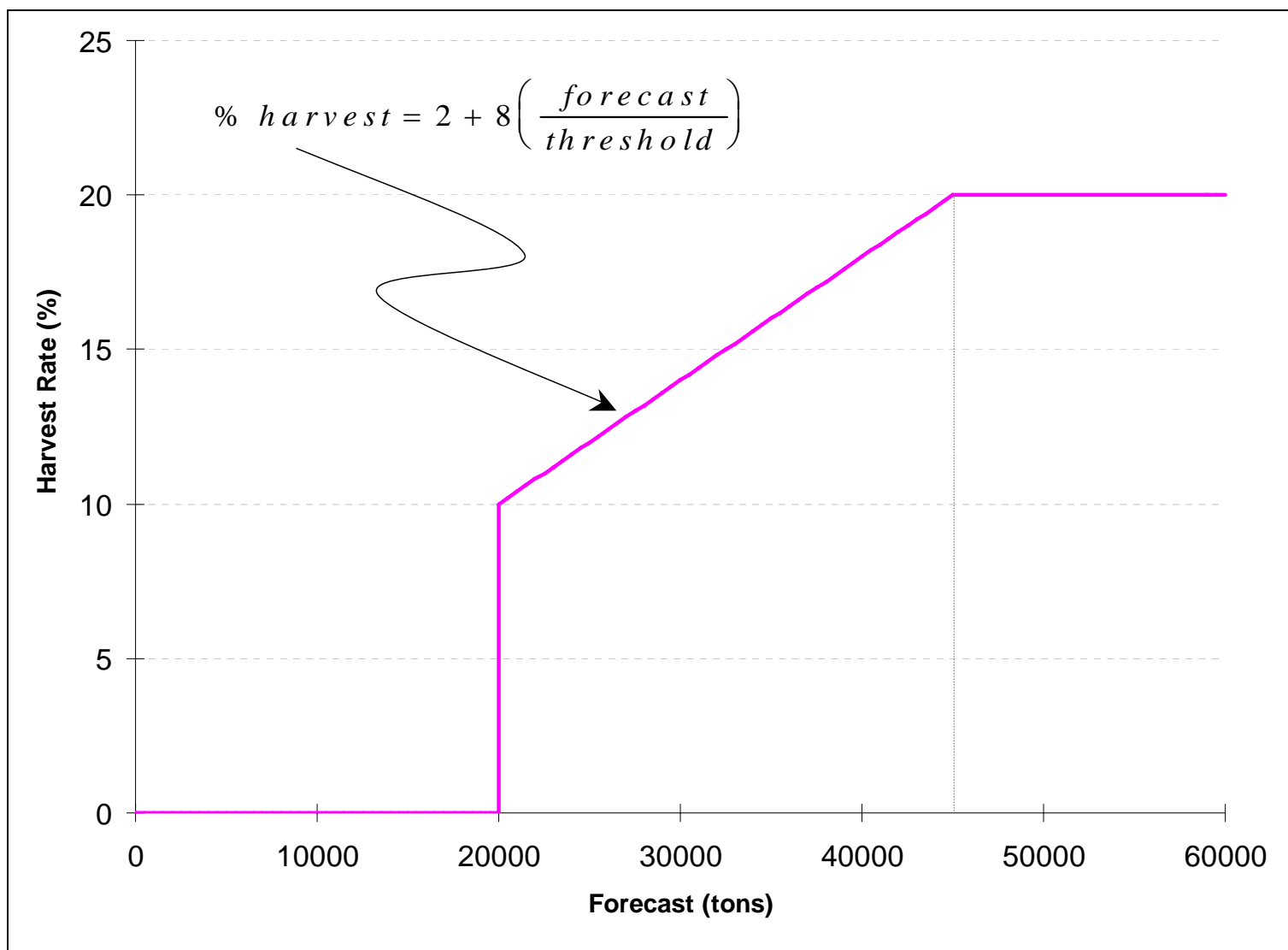


Figure 3.—Harvest rate and formula for Sitka Sound under 20,000 ton minimum threshold level [5 AAC 27.160 (g)].